

Maternal death in pregnancy due to COVID-19

We read with great interest the 'rapid review' by Mullins *et al.* on pregnant patients who had contracted coronavirus¹. They analyzed 32 cases affected by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in pregnancy and concluded that SARS-CoV-2 may have a lower mortality rate compared with two other strains of coronavirus, severe acute respiratory syndrome (SARS-CoV) and Middle East respiratory syndrome (MERS-CoV). We question whether this statement is premature.

The 2019 novel coronavirus disease (COVID-19), caused by SARS-CoV-2, first emerged in December 2019 in Wuhan, the capital of Hubei province in China². It has since become a global pandemic, infecting over 5 million people. Little is known about COVID-19, even less so how it affects pregnant patients. We have read comparisons of the impact of SARS-CoV-2 in pregnancy to that of other coronaviruses such as SARS-CoV and MERS-CoV.

When Mullins *et al.* published their article on 17 March 2020, there had been no reported maternal deaths as a result of SARS-CoV-2 infection¹. This has changed. Hantoushzadeh *et al.* analyzed nine pregnant women with SARS-CoV-2 infection; seven of these patients died due to COVID-19. Out of the seven reported maternal fatalities, five had no underlying health issues, which suggests that pregnancy could put women at higher risk of more severe consequences from SARS-CoV-2 infection³.

On 5 April 2020, a pregnant 28-year-old nurse in the UK contracted SARS-CoV-2. She was admitted to hospital 2 days later where her baby was successfully delivered by Cesarean section. Unfortunately, the patient died soon afterwards on 15 April. Again, this patient had no underlying health problems⁴.

The data for SARS-CoV and MERS-CoV in pregnancy are sparse. The largest study on SARS-CoV in pregnancy has a sample size of 12 pregnancies, and for MERS-CoV, there are only 13 case reports in pregnant women⁵. One, therefore, wonders whether SARS-CoV or MERS-CoV would have the same mortality rates in pregnancy as SARS-CoV-2, if a higher number of cases was available. Mullins *et al.* analyzed 32 cases of SARS-CoV-2 in pregnancy, two of whom required intensive care treatment and mechanical ventilation, and of these, one developed multiorgan failure¹. Elshafeey *et al.* highlighted in a systematic review a spectrum of disease in pregnant women with SARS-CoV-2. Whilst most patients had mild illness, they found that 17 of 385 SARS-CoV-2-positive pregnant women required intensive care treatment, of

whom six required mechanical ventilation, with one reported death⁶.

Whilst in the first instance it may appear that SARS-CoV-2 has lower maternal mortality than MERS-CoV and SARS-CoV, it should be borne in mind that this is based on a small number of pregnant patients. One wonders whether it is due to improvement in intensive care treatment that SARS-CoV-2 mortality rates appear lower, rather than a decreased pathogenicity of the virus itself. Given that a number of pregnant women have now died from COVID-19⁷, it is important to re-evaluate the mortality of SARS-CoV-2 in this group of patients. It is too soon to truly establish whether SARS-CoV-2 is any less dangerous in pregnancy than MERS-CoV and SARS-CoV.

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References

- Mullins E, Evans D, Viner RM, O'Brien P, Morris E. Coronavirus in pregnancy and delivery: rapid review. *Ultrasound Obstet Gynecol* 2020; 55: 586–592.
- Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, Iosifidis C, Agha R. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *Int J Surg* 2020; 76: 71–76.
- Hantoushzadeh S, Shamshirsaz AA, Aleyasin A, Seferovic MD, Aski SK, Arian SE, Pooransari P, Ghotbizadeh F, Aalipour S, Soleimani Z, Naemi M, Molaei B, Ahangari R, Salehi M, Oskoei AD, Pirozan P, Darkhaneh RF, Laki MG, Farani AK, Atrak S, Miri MM, Koucheh M, Shojaei S, Hadavand F, Keikha F, Hosseini MS, Borna S, Ariana S, Shariat M, Fatemi A, Nouri B, Nekooghadam SM, Aagaard K. Maternal death due to COVID-19. *Am J Obstet Gynecol* 2020. DOI: 10.1016/j.ajog.2020.04.030.
- BBC News. Coronavirus: Pregnant nurse dies but baby 'well' after delivery. 2020. <https://www.bbc.co.uk/news/uk-england-beds-bucks-herts-52301870>.
- Rasmussen SA, Smulian JC, Lednicki JA, Wen TS, Jamieson DJ. Coronavirus Disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. *Am J Obstet Gynecol* 2020; 222: 415–426.
- Elshafeey F, Magdi R, Hindi N, Elshebiny M, Farrag N, Mahdy S, Sabbour M, Gebriel S, Nasser M, Kamel M, Amir A, Maher Emar M, Nabhan A. A systematic scoping review of COVID-19 during pregnancy and childbirth. *Int J Gynaecol Obstet* 2020. DOI: 10.1002/ijgo.13182.
- Juan J, Gil MM, Rong Z, Zhang Y, Yang H, Poon LC. Effect of coronavirus disease 2019 (COVID-19) on maternal, perinatal and neonatal outcome: systematic review. *Ultrasound Obstet Gynecol* 2020; 56: 15–27.